

Message Text

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ORIGIN DOE-15

INFO OCT-01 ARA-14 EUR-12 EA-12 NEA-10 ISO-00 SOE-02
ACDA-12 IO-14 OES-07 SIG-03 AID-05 CEA-01 CIAE-00
COME-00 DODE-00 EB-08 H-02 INR-10 INT-05 L-03
NSAE-00 NSC-05 OMB-01 PM-05 ICA-20 SP-02 SS-15
STR-07 TRSE-00 NRC-07 CEQ-01 PA-02 /201 R

DRAFTED BY USDOE:IA:SCEJA:BT
APPROVED BY OES/NET:DHOYLE
USDOE:IA:HDBENGELSDORF
EA/RA: F BENNETT (INFO)
EUR/RPE: W SALISBURY (INFO)
EUR/NE: W NEWLIN (INFO)
ACDA: R WILLIAMSON (INFO)
ARA/RPP: P OAKLEY (INFO)
IO/SCT: A JILLSON (INFO)
NEA/RA: R PRICKETT(INFO)
EUR/WE:EBEIGEL (INFO)
OES/NET/EST:JBORIGHT (INFO)
EUR/CE:NLAUDLE (INFO)

-----021886 062016Z /14

P 061932Z APR 78
FM SECSTATE WASHDC
TO AMEMBASSY BONN PRIORITY
AMEMBASSY LONDON PRIORITY
AMEMBASSY OTTAWA PRIORITY
AMEMBASSY PARIS PRIORITY
AMEMBASSY STOCKHOLM PRIORITY
AMEMBASSY VIENNA PRIORITY
AMEMBASSY BRUSSELS PRIORITY
AMEMBASSY SEOUL PRIORITY
AMEMBASSY TOKYO PRIORITY
AMEMBASSY BUCHAREST PRIORITY
AMEMBASSY THE HAGUE PRIORITY
AMEMBASSY MEXICO PRIORITY
AMEMBASSY MADRID PRIORITY
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AMEMBASSY ROME PRIORITY
AMEMBASSY CARACAS PRIORITY
AMEMBASSY BRASILIA PRIORITY
AMEMBASSY MANILA PRIORITY
AMEMBASSY HELSINKI PRIORITY
AMEMBASSY CANBERRA PRIORITY
AMEMBASSY ANKARA PRIORITY

AMEMBASSY BERN PRIORITY
AMEMBASSY BELGRADE PRIORITY
AMEMBASSY COPENHAGEN PRIORITY
AMEMBASSY TEHRAN PRIORITY
AMEMBASSY ATHENS PRIORITY
AMEMBASSY TEL AVIV PRIORITY
AMEMBASSY BANGKOK PRIORITY

UNCLAS STATE 088681

USIAEA AND USEEC, ALSO FOR EMBASSIES

E.O. 11652: N/A

TAGS: TECH, ENRG, PARM

SUBJECT: RESEARCH REACTOR LOW ENRICHMENT FUEL DEVELOPMENT
PROGRAM

1. THE DEPARTMENT OF ENERGY ON APRIL 6 WILL ANNOUNCE A
PROGRAM FOR THE DEVELOPMENT OF LOW ENRICHMENT FUELS FOR
RESEARCH REACTORS. TEXT OF ANNOUNCEMENT FOLLOWS:

QUOTE A PROGRAM TO PERMIT DOMESTIC AND FOREIGN RESEARCH
REACTORS TO BE FUELED WITH NUCLEAR MATERIAL OF LESSER WEA-
PON PROLIFERATION POTENTIAL THAN NOW IN USE IS UNDERWAY
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BY THE DEPARTMENT OF ENERGY. THE 5-YEAR PROGRAM, ESTIMATED
TO COST \$10 MILLION, IMPLEMENTS PRESIDENT CARTER'S AIM
OF REDUCING THE RISKS ASSOCIATED WITH THE USE AND TRANS-
PORTATION OF HIGHLY ENRICHED URANIUM WHILE MAINTAINING U.S.
COMMITMENTS TO SUPPLY RESEARCH REACTOR FUEL.

OVER 60 RESEARCH REACTORS ARE IN OPERATION IN THE U.S. AND
FOREIGN COUNTRIES. THESE REACTORS RANGE IN POWER LEVEL
FROM 100 WATTS TO SEVERAL HUNDRED MEGAWATTS. THEY ARE
USED FOR MANY PURPOSES INCLUDING PRODUCTION OF RADIO-
ISOTOPES FOR MEDICAL, AGRICULTURAL, INDUSTRIAL AND RESEARCH
PURPOSES, MATERIALS TESTING FOR FISSION AND FUSION POWER
REACTORS, AND FOR BASIC SCIENTIFIC RESEARCH IN THE PHYSICS,

CHEMISTRY AND BIOLOGY FIELDS.

MANY OF THESE REACTORS USE FUEL CONTAINING URANIUM EN-
RICHED TO AS MUCH AS 93 PERCENT URANIUM 235; THAT IS UP
TO 93 PERCENT OF THE URANIUM IS FISSIONABLE AT LOW
NEUTRON ENERGIES AND THE REMAINDER OF THE URANIUM IS
NON-FISSIONABLE. HIGH ENRICHMENT URANIUM HAS A GREATER
POTENTIAL FOR NUCLEAR WEAPONS PROLIFERATION THAN URANIUM

IN THE LOWER ENRICHMENT RANGE, THAT IS IN THE RANGE OF A FEW PERCENT UP TO ABOUT 20 PERCENT. THE HIGH ENRICHMENT HAS BEEN USED IN RESEARCH AND TEST REACTORS BECAUSE, WITHIN THE LIMITS OF CURRENT FUEL FABRICATION TECHNOLOGY, THE RELATIVELY UNDILUTED FISSILE MATERIAL AFFORDS ECONOMIES IN OVERALL REACTOR DESIGN AND ALLOWS THE HIGHEST NEUTRON FLUX TO BE ACHIEVED FOR A PARTICULAR POWER LEVEL.

THE PROGRAM DOE HAS UNDERTAKEN IS FOR DEVELOPMENT OF FUEL WITH SIGNIFICANTLY INCREASED AMOUNTS OF URANIUM, THEREBY ALLOWING THE SAME QUANTITY OF URANIUM 235 TO BE INCORPORATED IN EACH FUEL ELEMENT BUT SO DILUTED AS TO PERMIT ENRICHMENT OF LESS THAN 20 PERCENT. IT IS EXPECTED UNCLASSIFIED

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THAT THE PERFORMANCE OF RESEARCH AND TEST REACTORS USING THIS FUEL ONCE IT IS DEVELOPED WOULD BE LITTLE AFFECTED BECAUSE THE URANIUM 235 CONTENT OF EACH ELEMENT WOULD BE UNCHANGED. THE COST OF THE LOW ENRICHED FUEL ELEMENTS IS EXPECTED TO BE ABOUT THE SAME AS THAT FOR HIGH ENRICHED ELEMENTS.

DOE IS ADVISING OPERATORS OF RESEARCH REACTOR FACILITIES THROUGHOUT THE WORLD OF ITS DESIGN AND DEVELOPMENT PROGRAM AND IS SOLICITING THEIR COOPERATION IN THE PROGRAM. DOE PLANS TO MAKE THE RESULTS OF ITS DEVELOPMENT EFFORT AVAILABLE TO OTHER NATIONS. THE USE OF SUCH LOW ENRICHED FUELS IS A TOPIC FOR DISCUSSION IN THE INTERNATIONAL FUEL CYCLE EVALUATION (INFCE) PROGRAM IN WHICH THE U.S. IS PARTICIPATING ALONG WITH 40 OTHER COUNTRIES AND FOUR INTERNATIONAL ORGANIZATIONS.

DOE'S ARGONNE NATIONAL LABORATORY IS PROVIDING THE TECHNICAL DIRECTION FOR THIS PROGRAM WHICH WILL BE CONDUCTED IN CONJUNCTION WITH INDUSTRIAL FABRICATORS OF TEST REACTOR FUEL. THE PROGRAM WILL INCLUDE ALUMINUM-URANIUM, AND ZIRCONIUM HYDRIDE-URANIUM FUELS. END QUOTE. VANCE

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INFO OCT-01 ISO-00 ARA-03 /007 R

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APPROVED BY OES/NET: D H COOPER

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FM SECSTATE WASHDC

TO AMEMBASSY BOGOTA PRIORITY

AMEMBASSY BUENOS AIRES PRIORITY

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FOL RPT STATE 088681 SENT ACTION BONN, LONDON, OTTAWA, PARIS,
STOCKHOLM, VIENNA, BRUSSELS, SEOUL, TOKYO, BUCHAREST, THE HAGUE,
MEXICO, MADRID, ROME, CARACAS, BRASILIA, MANILA, HELSINKI, CANBERRA,
ANKARA, BERN, BELGRADE, COPENHAGEN, TEHRAN, ATHENS, TEL AVIV &
BANGKOK DTD 06 APR 8

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Message Attributes

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